Situations, environmental niches and people could be measured using the same characteristics

Situations, environmental niches and people could be measured using the same characteristics

René Mõttus and Mike Allerhand, University of Edinburgh

Abstract: Rauthmann et al. offer a welcome attempt to put situation-sensitive personality research on a firmer conceptual and empirical basis. We suggest a clearer distinction between unique and more typical components of situations, and briefly describe a conceptual-mathematical toolbox that we are developing and that would represent within-individual processes, individual differences and interactions between individuals and their social and non-social environments (including situations) in a single framework. We believe that this can optimally be accomplished by representing situations and people using the same characteristics.

The target article provides a well-articulated framework for studying situations. It outlines relevant concepts, suggests how they relate to one another and describes possible methods for quantifying them. We hope that this will systematize and consolidate attempts to incorporate situations into personality research—something that probably almost everyone agrees is important but has been neglected for quite some time. Here, we take the opportunity to discuss two suggestions for personality-situation research. These suggestions seem to be consistent with the ideas of Rauthman et al.

First, we would suggest a clear distinction between momentary or current or unique situations (*à la* personality states) and more stable or typical components of situations (*à la* traits). The latter could also be called chronic situations or, to the extent that they represent person-environment transactions, environmental niches. It makes sense to hypothesize that some situations that people find themselves in reflect almost entirely their typical environments that they themselves have selected or created, whereas other situations are more unique. If so, it also seems plausible to hypothesize that the degree to which a situation is typical *versus* unique may have implications for how one's personality manifests itself in, or changes as a result of, the situation.

Empirically, experience sampling methodology could provide one way of decomposing situations into typical and unique components. For example, individuals could provide samples of their situational experiences over a period of time and/or over a range of situations. These samples could be random or the reflect experiences that are tied to (a) particular class(es) of situations. Each situation could be rated based on a fixed set of characteristics. Of course, obtaining parallel situation ratings from multiple raters such as suggested in the target article may prove difficult in this case. Having such data, however, research could hypothesize that average ratings of situation characteristics reflect typical situations, whereas deviations from the averages reflect the unique components of particular situations. In order to allow for a good decomposition of situational variance and investigations of developmental trends, longer-term measurement plans than those typically employed in experience sampling studies could be employed; for example, several measurement 'bursts' (intensive experience sampling periods) at different ages could prove useful.

It may be that the unique aspects of situations matter more for personality manifestations than the typical ones that people are used to. It may also be that individuals differ in how much they vary in their situational experiences or how sensitive their personalities are to the uniqueness of particular situations, for example.

Second, besides decomposing situations into typical and unique components, we believe that personality-situation research can benefit from measuring situations and people using the same characteristics. Situations can be operationalized as affordances for particular personality manifestations. For example, if a situation calls for a particular characteristic, it would have an

appropriate positive value for it, whereas a situation that suppresses the characteristic would have an appropriately sized negative value for it. And if a situation has no relevance for the characteristic, it would have a neutral (0) value for it. Assessments of situations and personality manifestations corresponding to each would allow for a direct operationalization of person-situation match (e.g., as a profile correlation). Changes in person-situation match over time and situations, in turn, could represent person-environment transactions such as individuals carving themselves niches (i.e., the typical situations) that match their (initial) personality characteristics and these niches possibly influencing them back. Likewise, influences of other people could then be incorporated as (unique or typical) components of situations as they, too, are assessed based on the same characteristics. It seems likely that many psychologically relevant situations contain multiple elements, with some of them being social (characteristics of other people) and some non-social: being able to aggregate and decompose these components could have benefits.

We are currently working on a conceptual and mathematical toolbox that would allow for representing within-individual processes and individual differences as well as interactions between individuals and interactions between individuals and their non-social environments in a single framework. In this framework, individuals are represented as interacting person vectors within a dynamic vector space (personality space), which is spanned by the dimensions that correspond to the characteristics on which the individuals are assessed. At any point of time, every person vector has a (potentially unlimited) number of forces acting on him or her. For example, these forces could include (relatively) invariant genetic influences as well more or less stable environmental influences such as those of physical environment, culture, other individuals or particular situations. If all these forces are operationalized using the same characteristics, they can be represented as vectors in the personality space, similarly to individuals. The force vectors can then interact and combine (with different weights) among themselves as well as influence and be influenced by the person vectors they pertain to. For example, a person vector tends to project towards the resultant of all the forces acting on it at the time, whereas it can influence these forces by being part of the similar resultants of other persons' vectors. The projection is achieved via causal connections between individuals' personality characteristics, hence representing within-individual processes. It appears that all these processes can be represented using a relatively simple set of mathematical rules.

We hope that this will be a powerful way for mathematically (and hence rigorously) representing and fine-tuning existing ideas about people and their interactions with their typical and unique, social and non-social situations. Moreover, we hope that the framework will serve to generate new ideas. Crucially, the viability of this framework will depend on individuals' situations being well characterized. As a result, there is a clear overlap between the cause of the target article and that our endeavour briefly described above.

To conclude, we have discussed the potential benefits of decomposing situations into typical and unique components and representing these situation components using the same characteristics that are used for the description of individuals. Nothing of that seems to contradict anything in the excellent target article of Rauthmann, Sherman and Funder.